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NOTES ON MORPHOLOGY OF *ACMISPON HELLERI* (FABACEAE)

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ABSTRACT

Recent field observations of *Acmispon helleri* in North Carolina point out a number of discrepancies or omissions regarding published descriptions, including stem color and pubescence, leaflet morphology and vestiture, and corolla color. Degree of foliation strongly corresponds with phenology — loss of leaves and leaflets over time appears to be common.

Acmispon helleri (Britt.) A.A. Heller is the eastern segregate of the western and midwestern *A. americanus* (Nutt.) Rydb. and is restricted to scattered locations in the piedmont of south-central Virginia, North Carolina, South Carolina, and northeastern Georgia (Weakley 2015). It was formerly placed within *Lotus,* sometimes as a full species, sometimes as a variety (see Brouillet 2008 and Weakley 2015 for synonymy).

Observations of living plants at sites in the lower piedmont of Union County, North Carolina, in 2010 suggest that several morphological characters are at variance with published descriptions. The most detailed description available is that of Wilbur (1963); also very helpful are the illustrations in Chafin (2007). Radford, Ahles, and Bell (1968) followed Wilbur in writing their description.

1. Stem color. Neither Wilbur nor Radford, Ahles, and Bell mention this. In the Union County plants, stems are wholly reddish brown. Branches are green, but often reddish brown basally.

2. Pubescence of stems and branches. Wilbur: stems and branches are "glabrate (especially below) to moderately spreading villous-pubescent." In the Union County plants, stems are sparsely to moderately villous throughout and branches moderately to densely villous. Drawings in Chafin (2007) corroborate this observation.

3. Leaflet morphology. Wilbur: leaflets "slightly mucronulate." Leaflets in Union County plants are mucronate with distinct, sharp, protruding tips.

4. Leaflet vestiture. Wilbur: leaflets "completely glabrous or the margins villous, and surfaces glabrous to sparsely villous." In the Union County plants, both surfaces of leaflets are moderately covered with appressed hairs; the margins are villous.

5. Corolla coloration, wings. Wilbur: "wings yellowish and tinged with pink." In the Union County plants, wings are entirely pale pink, with red venation. Photos of these plants (Fig. 1), and also those in Chafin (2007), corroborate this observation.

6. Corolla coloration, keels. Wilbur: "the keel yellowish." In the Union County plants, keels are dull white with a yellow tip.

7. Legume shape. Published descriptions merely state that pods are "linear" or "narrow," which is partly true, but they are also cylindrical.

Figure 1. *Acmispon helleri*, Union County, North Carolina, July 2010.

In the field, I was struck by how "full" or "robust" plants of *A. helleri* appear. That is, by examining herbarium specimens beforehand, I was expecting to see plants that had relatively few leaves and that would appear slender and sparsely foliated. Living plants (Fig. 1) appear very leafy, whereas specimens, especially those collected later in the season, have lost many leaves or leaflets. Thus, plants in September may have half or one-third as many leaflets as plants at anthesis in early August (pers. observ.). The loss of leaves over time appears to be common in *A. helleri* and may be an adaptation to loss of soil moisture in the clayey, shrink-swell soils in which this species typically grows.

Wilbur's description reflects the fact that available specimens were collected during the middle and later portions of the species' growing season. If specimens from earlier in the season were available, i.e., with most flowers at anthesis and with a full complement of leaves, his description would have been improved.

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